

**Table S1. Univariate and Multivariate Analysis of Factors Associated with OS of patients MASCT group and control group.**

Variables	Univariate analysis		Multivariate analysis	
	HR (95% CI)	<i>P</i> value	HR (95% CI)	<i>P</i> value
Gender, male/female	0.897 (0.348-2.314)	0.822		
Age, ≤60vs/>60y	1.097 (0.516-2.332)	0.811		
BCLC (0-A/B)	1.868 (0.725-4.809)	0.196		
Child-Pugh Stage A/B	2.571 (1.237-5.341)	0.009		
HBV infection (Yes/No)	1.017 (0.311-3.323)	0.977		
Cirrhosis (Yes/No)	1.396 (0.428-4.555)	0.579		
Tumor number (1/≥2)	2.621 (1.229-5.588)	0.013		
Tumor size (≤3cm/>3cm)	3.279 (1.656-6.492)	0.000	2.241(1.046-4.799)	0.038
AFP (≤400/>400ng/ml)	0.974 (0.458-2.073)	0.946		
HBV DNA (≤10000/>10000cps/ml)	0.804 (0.365-1.769)	0.587		
WBC (≤3.6/>3.6×10 <sup>9</sup> /L)	0.902 (0.424-1.919)	0.789		
LYM (≤1.0/>1.0×10 <sup>9</sup> /L)	0.843 (0.384-1.852)	0.670		
PLT (≤100/>100×10 <sup>9</sup> /L)	0.689 (0.357-1.330)	0.264		
ALP (≤125/>125U/L)	4.719 (2.218-10.039)	0.000	3.155 (1.434-6.941)	0.004
GGT (≤60/>60U/L)	1.518 (0.732-3.147)	0.258		
TBIL (≤20.5/>20.5umol/L)	1.046 (0.476-2.299)	0.910		
ALT (≤50/>50U/L)	1.133 (0.471-2.725)	0.780		
AST (≤40/>40U/L)	2.357 (1.225-4.536)	0.008		
ALB (≤40/>40g/L)	0.337 (0.140-0.811)	0.011	0.372 (0.129-1.075)	0.068
PT (≤13/>13s)	2.103 (1.034-4.278)	0.036	2.235 (0.937-5.333)	0.070
Curative treatment modality (Liver resection/ Percutaneous ablation)	0.859 (0.445-1.661)	0.652		
MASCT (Yes/No)	1.815 (0.827-3.983)	0.132		

Abbreviations: OS: overall survival; HR: hazard ratio; CI: indicates confidence interval; BCLC: Barcelona Clinic Liver Cancer; HBV: hepatitis B virus; AFP: alpha-fetoprotein; WBC: white blood cell; LYM: lymphocyte; PLT: platelet; ALP: alkaline phosphatase; GGT: gamma-glutamyl

transpeptidase; TBIL: total bilirubin; ALT: alanine aminotransferase; AST: aspartate transaminase; ALB: albumin; PT: prothrombin time; MASCT: multiple antigen stimulating cellular therapy.

**Table S2. Univariate and Multivariate Analysis of Factors Associated with OS of patients between multiple courses of MASCT group and control group.**

Variables	Univariate analysis		Multivariate analysis	
	HR (95% CI)	P value	HR (95% CI)	P value
Gender, male/female	0.611 (0.184-2.023)	0.420		
Age, ≤60vs/>60y	1.346 (0.596-3.041)	0.474		
BCLC (0-A/B)	1.952 (0.678-5.619)	0.215		
Child-Pugh Stage A/B	2.634(1.121-6.189)	0.026	2.462 (0.983-6.166)	0.054
HBV infection (Yes/No)	2.528 (0.962-6.641)	0.060		
Cirrhosis (Yes/No)	1.010 (0.306-3.341)	0.986		
Tumor number (1/≥2)	2.625 (1.118-6.167)	0.027		
Tumor size (≤3cm/>3cm)	3.232(1.520-6.872)	0.002	5.050(2.217-11.501)	0.000
AFP (≤400/>400ng/ml)	0.984 (0.436-2.223)	0.969		
HBV DNA (≤10000/>10000cps/ml)	0.553 (0.210-1.453)	0.229		
WBC (≤3.6/>3.6×10 <sup>9</sup> /L)	1.252 (0.510-3.077)	0.624		
LYM (≤1.0/>1.0×10 <sup>9</sup> /L)	1.040 (0.423-2.560)	0.932		
PLT (≤100/>100×10 <sup>9</sup> /L)	0.725 (0.348-1.509)	0.390		
ALP (≤125/>125U/L)	4.923(2.208-10.975)	0.000	6.974(2.800-17.372)	0.000
GGT (≤60/>60U/L)	1.591 (0.756-3.346)	0.221		
TBIL (≤20.5/>20.5umol/L)	0.932 (0.379-2.292)	0.878		
ALT (≤50/>50U/L)	0.604 (0.183-1.998)	0.409		
AST (≤40/>40U/L)	2.266 (1.090-4.712)	0.029		
ALB (≤40/>40g/L)	0.258 (0.090-0.744)	0.012	0.278 (0.095-0.816)	0.020
PT (≤13/>13s)	1.743 (0.810-3.753)	0.155		
Curative treatment modality (Liver resection/ Percutaneous ablation)	0.896 (0.430-1.868)	0.770		
MASCT (Yes/No)	0.116 (0.016-0.852)	0.034	0.059 (0.007-0.469)	0.007

Abbreviations: OS: overall survival; HR: hazard ratio; CI: indicates confidence interval; BCLC: Barcelona Clinic Liver Cancer; HBV: hepatitis B virus; AFP: alpha-fetoprotein; WBC: white blood cell; LYM: lymphocyte; PLT: platelet; ALP: alkaline phosphatase; GGT: gamma-glutamyl transpeptidase; TBIL: total bilirubin; ALT: alanine aminotransferase; AST: aspartate transaminase; ALB: albumin; PT: protzrombin time; MASCT: multiple antigen stimulating cellular therapy.